

SPECIFICATION AMENDMENTS:

Please amend the specification as follows:

Please replace paragraph [0001] with the following amended paragraph:

The present invention relates to a high frequency substrate, and more specifically to a high frequency substrate capable of increasing the signal transmission speed of the high-frequency signal transmission line and maintaining the power plane and the ground plane in a stable voltage status.

Please replace paragraph [0003] with the following amended paragraph:

Please refer to FIG. 1, the cross-sectional view of a conventional high frequency substrate. In FIG. 1, the high frequency substrate 100 comprises a power plane 102, a ground plane 106, a high-frequency signal transmission line 110 and dielectric layers 104 and 108. The dielectric layer 104 is formed on the power plane 102; the ground plane 106 is formed on the dielectric layer 104. The dielectric layer 108 is formed on the ground plane 106 while the high-frequency signal transmission line 110 is deposited on the dielectric layer 108. Of which, the The dielectric constant of the air outside the high-frequency signal transmission line 110 is 1 while the dielectric constant of the dielectric layers 104 and 108 is ϵ_r wherein the value of ϵ_r being greater than 1, say 4 for instance. Besides, the dielectric layers 104 and 108 are normally dense structures.

Please replace paragraph [0004] with the following amended paragraph:

Suppose that the signal transmission speed in the high-frequency signal transmission line 110 is V_p , then $V_p = C / (\epsilon_{eff})^{1/2}$. Wherein C is the speed of the light while ϵ_{eff} is the effective dielectric constant. That is to say, the signal transmission speed V_p is inversely proportional to the square root of the effective dielectric constant ϵ_{eff} . It is noteworthy that ϵ_{eff} varies with the intensity of signal transmission frequency. In other words, an electromagnetic field will be generated during signal transmission. Of which, the The dielectric constant for the medium of the high electromagnetic area can be regarded as ϵ_{eff} .

Please replace paragraph [0005] with the following amended paragraph:

Unlike in the case of low-frequency operation where the electromagnetic field generated during signal transmission concentrates in the air outside the high-frequency signal transmission line 110, the electromagnetic field generated during signal transmission almost entirely concentrates in the dielectric layer 108 because the high-frequency signal transmission line 110 normally has a high frequency of signal transmission. So the effective dielectric constant ϵ_{eff} approximately equals to the dielectric constant ϵ_r of the dielectric layer 108. For instance, the value of ϵ_{eff} equals 4. Hence, the signal transmission speed V_p will slow down, which increases the energy loss of signals and in turn greatly affects signal transmission quality greatly.

Please replace paragraph [0006] with the following amended paragraph:

Moreover, the voltages of the power plane 102 and the ground plane 106 are interfered by with one another due to the low dielectric constant of the dielectric layer 104; for

example, ϵ_r is 4. The values of voltage in the power plane 102 and the ground plane 106 vary; the power plane 102 and the ground plane 106 are unable to be maintained in a stable voltage status so that the high frequency substrate 100 is subjected to huge impacts and unable to keep in well progress. All of this begs for improvement.

Please replace paragraph [0007] with the following amended paragraph:

~~In view of the aforesaid view of the aforesaid~~ difficulties of the conventional techniques, the present invention aims to provide a high frequency substrate with a high frequency transmission line formed on a low-dielectric-coefficient dielectric layer, so that high speed and high frequency transmission are thus achieved. Further more, the high frequency substrate of the invention has a high-dielectric-coefficient dielectric layer formed between the power plane and the ground plane, so that the voltage of the power plane and the ground plane are maintained stable with this particular design.

Please replace paragraph [0008] with the following amended paragraph:

It is therefore an object of the present invention to provide an improved high frequency substrate at least having at least a first metal layer, a first dielectric layer, a second metal layer, a second dielectric layer and a high-frequency signal transmission line. The first dielectric layer is formed on the first metal layer, and the first dielectric layer is made of a high dielectric coefficient material. The second metal layer is formed on the first dielectric layer and the second dielectric layer is formed on the second metal layer; the second dielectric layer is made of a low dielectric coefficient material. The high-frequency signal transmission line is formed on the second dielectric layer.

Please replace paragraph [0011] with the following amended paragraph:

It is ~~further~~ another further object of the present invention to provide a method of forming a substrate. The method includes the steps described as follow: first, a first dielectric layer is performed. Then, portions of the first dielectric layer are etched so that an opening is formed on the first dielectric layer. Further, a second dielectric layer is filled within the space; a signal transmission line is finally formed on the second dielectric layer. While the second dielectric layer is made of a low dielectric coefficient material, the signal transmission line thereon is a high-frequency signal transmission line. Relatively, while the second dielectric layer is made of a high dielectric coefficient material, the signal transmission line thereon is a low-frequency signal transmission line.

Please replace paragraph [0020] with the following amended paragraph:

Further, the dielectric coefficient of the dielectric layer 212 is greater than the dielectric coefficient of the traditional dielectric layer 104 shown in FIG. 1. It will be appreciated that the metal layers 202 and 206 (such as a power plane and a ground plane) can be maintained in a stable voltage status and the high frequency substrate 200 can be kept in well progress.

Please replace paragraph [0024] with the following amended paragraph:

Consideration should be given here to the dielectric layer 314. The top ~~superficial~~ measure surface area of the dielectric layer 314 is equal to or larger than the bottom ~~superficial~~ measure surface area of the high-frequency signal transmission line 310. The low-frequency

signal transmission line 318 is disposed on the dielectric layer 316 so that the low-frequency signal transmission line 318 can be maintained in a stable voltage status.

Please replace paragraph [0025] with the following amended paragraph:

Moreover, the dielectric coefficient of the dielectric layer 312 is greater than the dielectric coefficient of the traditional dielectric layer 104 shown in FIG. 1. It will be appreciated that the metal layers 302 and 306 (such as a power plane and a ground plane) can be maintained in a stable voltage status and the high frequency substrate 300 can be kept in well progress.

Please replace paragraph [0026] with the following amended paragraph:

FIG. 4 is a cross-sectional view of a high frequency substrate in accordance with the third preferred embodiment of the invention. Referring to FIG. 4, the high frequency substrate 400 has two metal layers 402 and 406, a high-frequency signal transmission line 410, a low-frequency signal transmission line 418 and four dielectric layers 412, 414, 416 and 420. The dielectric layer 412 is on the metal layer 402 and the dielectric layer 412 is made of a high dielectric coefficient material; the value of the dielectric coefficient thereof is more than 4. The metal layer 406 is formed on the dielectric layer 412 and the dielectric layer 416 is formed on the metal layer 406. The dielectric layer ~~416~~ 416 is possessed of openings 422 and 424, so that portions of the metal layer 406 are exposed via the openings 422 and 424. Further, the dielectric layers 414 and 416 are respectively filled within the opening 422 and within the opening 424 but are both on the metal layer 406, so that the dielectric layers 414, 416 and 420 are all on the metal layer 406. The

dielectric layer 414 is made of a low dielectric coefficient material; the value of the dielectric coefficient thereof is less than 4. The dielectric layers 412 and 416 are both made of same high dielectric coefficient materials. The high-frequency signal transmission line 410 is on the dielectric layer 414 and a low-frequency signal transmission line 418 is on the dielectric layer 416.

Please replace paragraph [0028] with the following amended paragraph:

Consideration should be given here to the dielectric layer 414. The top superficial measure surface area of the dielectric layer 414 is equal to or larger than the bottom superficial measure surface area of the high-frequency signal transmission line 410. The low-frequency signal transmission line 418 is disposed on the dielectric layer 416 so that the low-frequency signal transmission line 418 can be maintained in a stable voltage status. Further, the dielectric coefficient of the dielectric layer 412 is more than the dielectric coefficient of the traditional dielectric layer 104 shown in FIG. 1. It will be appreciated that the metal layers 402 and 406 (such as a power plate and a ground plane) can be maintained in a stable voltage status and the high frequency substrate 400 can be kept in well progress.